UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,252	03/19/2001	Gary B. Gordon	10010189-1	7805

			EXAMINER
22878	7590	03/10/2004	ABDULSELAM, ABBAS I

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ART UNIT	PAPER NUMBER
2674	10

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _02 March 2004_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-35_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-35_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: ____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 03/02/04 has been entered.

2.   Applicant's arguments with respect to claims 1-35 have been considered but are moot in

view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claims 1-10, 14-26 and 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ferrari et al. (USPN 6392636) in view of Kuroda (USPN 5376947) and Hsu et al. (USPN

6134340).

Regarding claims 1 and 19, Ferrari teaches a plurality N of capacitance sensing elements

that are arranged to cooperate with a fingertip to produce an output signal that controls the

movement of a cursor/pointer across a display screen (col. 5, lines 50-54). Ferrari teaches a thin

dielectric layer (25) covering capacitive plates (23, 24) and the upper horizontal surface (125) of

layer (25) providing an active array surface for physical contact by skin surface (18) of a finger

(col. 7, lines 45-51. and Fig. 2). Furthermore, Ferrari teaches a processing unit (160) with respect

to all cell outputs (17) including an electric picture signal that appears as a bright blob (170)

positioned on the dark background. see col. 9, lines 14-19. See col. 8, lines 38-42, col. 9, lines

14-18 and Fig 4. Moreover, Ferrari teaches digitizing a fingerprint pattern and discloses that a

user achieves a desired cursor pointer movement by sidewise rolling movement of fingertip (18)

represented by arrow (304) and /or by lengthwise end to end pitching of fingertip (18)

represented by arrows (305). See col. 7, lines 8-11 and col. 10, lines 51-54. However, Ferrari

does not disclose a controller configured to generate movement data based on a comparison of

successively generated sets of values. Kuroda on the other hand teaches a calculation operation

at moving-amount calculating unit (S6) which is comparing/calculating circuit (50) comparing

the present detection data outputted from the touch detecting circuit (31) with previous detection

data stored in the first memory (41) in order that the input position movement is produced as

movement data. See Fig. 3 (S6), Fig. 2 and Fig. 4.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify Ferrari's input system to include Kuroda's comparing/calculating

circuit (50). One would have been motivated in view of the suggestion in Kuroda that the

comparing/calculating circuit (50) equivalently provides the desired comparison of successively

generated sets of values. The use of comparing/calculating circuit helps function a touch-type

input terminal apparatus as taught by Kuroda.

Ferrari does not teach generation of pixel values and a comparison such that the comparison includes "comparing a first one of the sets with at least one pixel shifted version of a second one of the sets". Hsu on the other hand teaches s fingerprint sensor (10), capacitive or optical type, and a correlator processor (18) (Fig. 1 &Fig. 10), which performs pixel-to-pixel comparison (see col. 12, lines 45-47). Hsu teaches the correlator processor (18) comparing the pixel from all of the "reference patches" with a second set of 128 pixels from the "subject image", offset by one pixel with respect to a first set. (For example, if the first set of pixels is represented as including pixel #0 through pixel #127, the second set after shifting, will include pixel #1 through pixel #128. See col. 13, lines 34-48, Fig. 1, Fig. 10, and Fig. 14.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ferrari's capacitive touchpad system to incorporate Hsu's Fingerprint correlator processor (18). One would have been motivated in view of the suggestion in Hsu that the correlator processor (18) as configured in Fig. 1 and as demonstrated in Fig. 14 equivalently provides the desired comparison of pixels with pixels that are shifted. The use of correlator processor helps function a capacitive fingerprint sensor as taught by Hsu et al.

Regarding claim 19, in addition to what has been discussed above, Kuroda discloses a data adjusting circuit (52) to which previous movement data delta .x1, and delta .y1 are outputted (step S65) and also alternatively movement data delta.x2, delta.y2 are outputted (S67) so that adjustment of movement data takes place based on area data. See Fig. 3 and Col. 5, lines 17-24. It would have been obvious that the data adjusting circuit (52) is equivalent to the desired correlation of versions of images.

Regarding claims 2-4 and 20, Ferrari teaches multiple N of capacitance sensing cells. See col. 5, lines 50-54.

Regarding claims 5, 9, 21, and 25, Ferrari teaches the use of integrated capacitive tactile imaging sensor which comprises a multi-layer construction including a thin conductive rubber layer and a top protective layer. See col. 2, lines 5-16.

Regarding claims 6-7 and 22-23, Ferrari teaches the use a thin dielectric layer (25) covering capacitive plates (23, 24). See Fig 2.

Regarding claims 8 and 24, Ferrari teaches the use of a thin (0.1 micrometer) silicon nitride insulator overlaying the capacitor plate. See col. 2, lines 41-50.

Regarding claims 10 and 26, Ferrari teaches fingerprint-scanning arrays using polysilicon TFT's of polymer and glass substrates. See col. 2, lines 19-31.

Regarding claim 14, Ferrari teaches scanning stages (5, 6) comprising shift registers, or decoders that operate to integrate outputs (17) of cells (2) in time sequence.

Regarding claims 15-16 and 28-29, Ferrari teaches the arrangement of 25 sensor cells in a row/column array. See Fig 8.

Regarding claims 17-18, and 30-31, Ferrari teaches cursor/pointer movement as the fingertip is pitched end to end on the upper surface of the array. In addition, Ferrari discloses a capacitive–type fingerprint sensor having a sensor pad with an array of row/column sensing elements with a specific pitch value. See col. 3, lines 37-47 and col. 5, lines 1-10.

Regarding claim 32-35, Ferrari teaches N of capacitive sensing cells arranged in arrow/column array as shown in Fig. 8. One of ordinary skill in the art would have set any desired size of the array.

Claims 11-13 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ferrari et al in view of Kuroda and Hsu et al. and in further view of Aroyan et al. (USPN

6163313).

Ferrari as modified has been discussed above, However, Ferrari does not teach a

conductive rim along with alternating current signal source for driving the conducting rim.

Aroyan on the other hand teaches a conductive coating (730) serving two functions one of which

is the conductive coating (730), being driven by AC driving signals that are applied to four

corner electrodes. See col. 17, lines 66-67, col. 18, lines 1-7 and Fig. 12.

Therefore, it would have been obvious to further modify Ferrari's touchpad system to

incorporate Aroyan's conductive coating (730) along with AC driving signals. One would have

been motivated in view of the suggestion in Aroyan that the conductive coating as configured in

Fig. 12 is functionally equivalent to the desired conductive rim. The use of conductive coating

(730) helps function a touch sensitive screen as taught by Aroyan et al.

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. The following arts are cited for further reference.

U.S. Pat. No. 6, 067,113 to Hrwitz et al.

U.S. Pat. No. 6,369,737 to Yang et al.

5.   Any inquiry concerning this communication or earlier communication from the examiner

should be directed to **Abbas Abdulselam** whose telephone number is **(703) 305-8591.** The

examiner can normally be reached on Monday through Friday (9:00-5:30).

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709.**

                    Any response to this action should be mailed to:

                    Commissioner of patents and Trademarks

                    Washington, D.C. 20231

or faxed to:

                              (703) 872-9314

        Hand delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington,

VA, Sixth Floor (Receptionist).

        Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology center 2600 customer Service office whose telephone

number is (703) 306-0377.

                                                    Abbas Abdulselam

                                                    Examiner

                                                    Art Unit 2674

                                                    March 5, 2004

**XIAO WU
PRIMARY EXAMINER**